PRESENTERS PROGRAM – DETAILED SCRIPT

Slide 1: TITLE SLIDE

Thank you for having me, its great to be here with \_\_\_\_\_\_\_\_\_ to talk about Repowering Australia with clean energy.

Slide 2: AUSTRALIA IS AT A CROSSROADS

Australia is standing at a crossroads. We have a choice about our energy future. However, that choice is no longer a choice between dirty energy and clean energy, it is not a matter of if, it's a choice about HOW we transition to clean energy.

Will the transition be slow, bumpy and leave people behind? Or will it be quick, efficient, inclusive and maximise the benefits to Australia?

Because the transition to clean energy is now inevitable.

Slide 3: OUR ROLE

What is not inevitable is that this transition will be as fast as the climate science demands and as fairly as we should all demand.

This then is our challenge – driving a faster and fairer transition to clean energy.

The transition is now inevitable for 5 reasons.

Slide 4: IT’S INEVITABLE: COST

Reason 1. Renewables are now cheaper.

* Over the past five years there has been a revolution in the economics of renewable energy.
* Wind and solar are now cheaper to build than coal and gas.
* Solar is cheaper for a household than grid electricity and these trends will continue.

Slide 5: IT’S INEVITABLE: AGING COAL

Reason 2: Australia’s coal fleet is old and failing

* With the closure of Hazelwood in 2017, Australia’s dirtiest power plant finally shut down. Hazelwood was the latest of 10 old coal plants that have shut down in the last decade. However, there are still 19 more coal-fired power stations chugging away, spewing pollution into the atmosphere.
* The plants that are most responsible for cooking the planet are also the worst for our health, emitting more toxic NOx, SOx (nitrogen and sulphur oxides), mercury and particle pollution.
* As these old clunkers close they are going to be replaced by the cheapest form of new generation and that will be wind and solar, backed-up by storage.

Slide 6: IT’S INEVITABLE: OPPORTUNITY

Reason 3: It's a huge opportunity for Australia

* Our country is perfect for solar, wind and wave energy. In fact, we have some of the richest clean renewable energy resources in the world. Indeed compared to places like Germany which are known for being leaders in renewable energy, we have double the amount of sunlight each year in Australia.
* We have significant land area and a low population.
* We are one of the best-equipped countries in the world to transform our energy system to 100% renewables and help our neighbours go renewables too.

Slide 7: IT’S INEVITABLE: AUSTRALIANS LOVE SOLAR

Reason 4: Australians love solar

* Poll after poll shows that Australian’s love solar, in fact support for renewables is at 65-90%.
* And we’re putting our money where out mouth is. When it comes to rooftop solar, Australia is number one in the world.
* There are more than 2 million solar rooftops glinting across the country, up from less than 100,000 in 2008. That means 2 million have been installed in the last decade!
* And the numbers are still growing with around 3,000 Australian households going solar every single week.

Slide 8: IT’S INEVITABLE: CREATES A BETTER LIFE

Reason 5: Upgrading Australia to clean energy creates a better life for everyone. It will:

* create better jobs and additional regional development
* bring cleaner air and so a healthier future for our children
* help us control our bills and reduce them,
* stop damaging our climate.

Slide 9: ACHIEVABLE

Experts agree that shifting to an energy system powered by the sun and wind is technically feasible.

* Modelling from the ISF shows that given the abundance of Australia’s solar, wind and sustainable bioenergy resources, a transition to 100% renewable energy within one generation is both technically feasible and economically responsible.
* And they are not alone with their findings. There are at least nine other studies conducted in the last seven years that have analysed how Australia can move from an electricity system based on polluting coal and gas to one powered by the sun, wind and waves.
* Indeed, the Australian Energy Market Operator (AEMO) – the very body tasked with making sure we have energy when we need it – found that there are “no fundamental limits to 100% renewables”, and that current standards of system security and reliability will be maintained.
* These studies all show different pathways to 100% renewable energy, however what they all agree on is that 100% renewables can be achieved.

Slide 10: … AND WE HAVE A PLAN

The good news we have a plan to get there – the Repower Australia Plan. This plan outlines how we can repower the country with 100% clean energy, rewrite the rules of our failing electricity system and replace the polluters holding us back.

Slide 11: HERE’S HOW 100% RENEWABLES WILL WORK

So how will 100% renewables work in practice?

Slide 12: BIG ON LOW-COST RENEWABLES

First we’re going to go big on the least-cost clean energy technology and that is wind and solar. We’re going to see a lot of large-scale wind and solar farms.

Slide 13: FILL THE GAPS WITH A DIVERSITY OF TECHNOLOGY

Then we’re going to fill the gaps – overnight and on low-wind days with a diversity of other technologies, like battery storage, pumped hydro, concentrating solar thermal, and sustainable bioenergy.

Slide 14: FILL THE GAPS WITH A DIVERSITY OF TECHNOLOGY

Modelling from both UNSW and energy consultancy ITPower show that to get the least-cost and most reliable mix of generation we need a diversity of technologies, in a diversity of locations, which can run for different durations. For example when the wind is blowing a gale at different times in South Australia and Northern Queensland, so we need wind farms in both places.

Slide 15: FILL THE GAPS WITH A DIVERSITY OF TECHNOLOGY

What this means is complete paradigm shift in how our energy system will work. From a 20th Century system based on baseload coal power plants, that run all the time (because they can’t ramp down) and times of peak energy demand being met by peaking gas plants and hydro power. Moving to a system where the bulk of our electricity needs are met by low-cost variable renewables like wind and solar and the gaps are filled by dispatchable renewable technologies and storage.

Slide 16: SMALL SO EVERYONE CAN BENEFIT

Actually the new decentralised energy technologies create new opportunities for everyone to participate in our energy system – the small and medium sized systems enable a more distributed application. Just think of the solar household system, hot water system or the smart meters in your home.

With these new opportunities, the times when the motto was a “better power station is always a bigger power station farther away” are gone. In fact, controlling, owning and benefitting from electricity generation is no longer left to a few big corporates anymore. All members of the community can participate and enjoy the many benefits of clean and affordable electricity from renewable energy technologies.

According to CSIRO and Energy Networks Australia at least 30-45% of Australia’s future energy generation will be local and customer-owned, in homes, businesses and communities. In the future all Australians will be able to access and benefit from decentralised generation, energy efficiency and storage.

Apart from the more obvious beneficiaries like solar households, businesses, councils and farmers, the renewable energy revolution creates opportunities for:

* Aboriginal and remote communities – solar systems are a no brainer in the outback and can help to significantly reduce their power bills which can be as high as $3000 a quarter;
* Vulnerable and locked out energy users -those include renters, people who live in apartments, have unsuitable roofs or cannot afford them. Innovative business models and initiatives like Solar Gardens or the Darebin Solar Savers Program can enable them to participate.
* It is also a great opportunity for fossil fuel workers and their communities. The inevitable phase out of dirty coal will bring new challenges but also create the chance to reuse the existing energy infrastructure for renewable energy generation, creating new jobs and bring long-term economic development to these regions.

Slide 17: INDUSTRY AND TRANSPORT GO TO RENEWABLES TOO

As the world moves to act on climate change, we are going to see cars, buses and trucks move from being powered by petrol and diesel to being powered by electricity. Already in places like Norway, Electric Vehicles make up more than 50% of new car sales.

We will also see our homes switch away from gas for heating and cooking to more efficient electrical appliances. While in industry, a whole range of industrial processes that rely on gas and coal for heat will switch to electric or renewable sources of heat.

Fuel switching from fossil fuels to electricity will increase the demand for more renewable electricity. So our grid will be bigger than before, but we will be much less dependent on importing oil and there will be no need for fracking.

Slide 18: DEMAND IS AS IMPORTANT AS SUPPLY

The cleanest form of energy is the energy we don’t use. Australian houses and industry are some of the most inefficient in the industrialised world. That means we can go a long way to reduce our energy needs, and create the same result. From better insulated houses, to more efficient industrial processes, energy efficiency will be critical in a clean energy future.

In the past we have focused predominantly on electricity supply, but electricity demand is also important, not only reducing it through energy efficiency, but shifting our energy use. So for example we charge our electric cars or turn on our washing machines or hot water systems when the sun is shining and the wind is blowing. This is called demand response and it is going to be critical in our future energy system.

Slide 19: POLES AND WIRES ONLY WHERE WE NEED THEM

Over the last decade electricity networks spent $70billion of your money gold plating our electricity grid. This is the single biggest cause of electricity prices rising. The backbone of a 100% renewables system will be a smarter grid. While many people like the idea of going off-grid, the electricity grid is essential, it is part of our welfare system – ensuring everyone can access electricity to heat, cool, cook, wash etc.

The future grid is going to look a little different. In some places there will be less grid – we will disconnect many edge of grid communities from the main grid and they will be serviced by mini-grids, with their own renewables and storage. This will save everyone money.

In some places there will be more poles and wires – we will build new transmission lines to those places where the sun shines the brightest and the wind blows the strongest – these will be Renewable Energy Zones and are the basis for AEMO’s plan for the future of our electricity system.

Slide 20: WE EXPORT RENEWABLES TO THE WORLD

As I already mentioned, Australia has some of the best renewable resources in the world. We can export our renewables as liquid sunshine to our neighbours who have less sun and less land. We do this in the form of Hydrogen and Ammonia. We use excess renewable electricity to split water into Hydrogen and Oxygen. The hydrogen can then be used as a fuel, or turned into ammonia. Ammonia is already one of the top 10 most traded commodities globally and can be exported to places like Japan and South Korea where they will turn it back into hydrogen to power their buses and their industry.

Slide 21: MORE RELIABLE IN EXTREME WEATHER

Contrary to what opponents of clean energy say, the energy system of the future will be more reliable, not less. Over 95% of all blackouts in Australia are caused by our poles and wires failing. A tree falling on them, a line breaking in a big wind storm etc. In the future, if there is a big storm, communities and suburbs across Australia can disconnect from the main grid for a few hours at the time and weather the storm. In those communities there will be enough renewables and storage to power that community for a few hours, while the lines are repaired and the community can be reconnected to the main grid.

Slide 22: BUT WE’RE BEING HELD BACK BY COAL COMPANIES

All of this is technically achievable and engineers are working on making the 100% renewable future a reality. Unfortunately, we are being held back. Coal companies have billions of dollars to lose as the world moves away from fossil fuels to renewables. Its no wonder companies like Glencore (the world’s largest coal company) [are spending millions running scare campaigns about renewables](https://www.theguardian.com/australia-news/2019/mar/08/national-disgrace-glencore-coal-campaign-revelations-prompt-calls-for-reform) and coal barons like Trevor St Baker are lobbying for new coal fired power stations and Clive Palmer spent $60million dollars on the last election to help advance his new coal mine in Queensland.

Slide 23: AND A GREEDY FEW ENERGY COMPANIES ARE RIPPING US OFF

And it’s not just the coal companies. The big three energy companies – AGL, Origin and Energy Australia – are also working to delay the transition to clean energy to increase their own profit margins. Indeed, they have a bad record in cleaning up the sector.

After Hazelwood closed, analysis by [Victoria University found that the Big 3 pushed up the price of their coal power, gouging customers to the tune of $3billion](https://www.abc.net.au/news/2019-03-25/energy-companies-gouge-customers-hazelwood-electricity-bill/10910948).

It is unacceptable that these companies are hoarding more profits while making people sick and putting our whole world at risk.

Slide 24: AND POLITICIANS LETTING US DOWN

Unfortunately our politicians are also burying their heads in the sand. They letting us down by continuing to back coal and refusing to lead on climate change. Indeed, many Australian politicians are out of step with what is happening internationally.

In fact, Australia is the only developed country that allows climate change funding to be used to upgrade coal-fired power plants. Early March the Morrison government announced Vales Point coal-fired power station could register with the government’s emissions reduction fund and claims this to be a “climate solutions” policy. (<https://www.theguardian.com/environment/2019/mar/01/out-on-its-own-australia-the-only-country-to-use-climate-funding-to-upgrade-coal-fired-plants>)

Slide 25: WE MUST TAKE BACK CONTROL

So what do we do?

We have to fight for solutions and take back control of our energy and our future!

The good news is that that’s just what many people are doing. I want to share with you just a few stories of Australians taking back control and driving a faster and fairer transition to clean energy…

Slide 26: SUNNY SHIRE

Jonathan Prendergast lives in the Sutherland Shire or “the Shire” where people such as our Prime Minister Scott Morison and Craig Kelly MP hail from. The Shire isn’t a hotbed of solar, so Jonathan decided to change that. He got a few friends together and founded Sunny Shire. What Sunny Shire has done, is make it easier for local households to get solar and batteries. They have run a bulk-buy program with discounted prices, selecting trustworthy local solar companies and equipment and ultimately seeing through the installation process.

Slide 27: SOLAR GARDENS

This is Nicky Ison, she rents an apartment and despite asking nicely, her landlord won’t install solar. That’s why she and her organisation Community Power Agency are working together to create a new way of doing solar, for those who don’t own a sunny roof. It’s called a solar garden.

A solar garden works by installing a centralised solar power system off-site on a warehouse roof or in a paddock at the edge of town. Renters like Nicky then have the opportunity to lease or buy a share of panels in the system, with the electricity their panels generate credited on their electricity bill. Though the panels are located somewhere else, Nicky gets a similar outcome as having solar on her own roof.

Slide 28: WHYALLA STEELWORKS

Let’s check out a great example how a large energy user a steel business in South Australia actually moved to renewables and helped save a town!

In a nutshell:

* Whyalla is a regional town of about 23,000 people, about 380 kilometres north of Adelaide.
* In 2016 the South Australian town of 21,000 people was on the verge of collapse. Crippled by $4 billion worth of debt, the steelworks' owner, Arrium, had gone into voluntary administration. The jobs of 3,000 employees hung in the balance.
* Billionaire Sanjeev Gupta, turned around the town's fortunes by buying the steel business and committing to power it by renewable energy.
* The company announced it would start building a $1 billion solar farm near Whyalla in 2019 – 280-megawatt Cultana Solar,
* The project will utilise 780,000 solar panels on an area of 1100 hectares and employ 350 people in the construction phase and providing greater energy security to the Whyalla Liberty OneSteel steelworks.
* Billionaire Sanjeev Gupta said the investment by his company, SIMEC ZEN Energy, formed part of his firm belief there was a great future for energy-intensive industries through a transition to more renewable energy.
* The renewable energy projects in the Spencer Gulf region would substantially reduce the cost of electricity for the steelworks but would also provide competitive sources of power for other industrial and commercial users by feeding energy back into the electricity grid.

<https://www.abc.net.au/news/2018-08-15/gupta-launches-1-billion-renewables-program-in-whyalla/10122036>

<https://reneweconomy.com.au/gupta-doubles-down-on-green-industrial-plans-for-whyalla-powered-by-cheap-renewables-24759/>

<https://www.abc.net.au/news/2018-09-24/whyalla-steelworks-how-a-town-saved-itself/9984998>

Slide 29: REPOWER SHOALHAVEN

Chris Cooper is a community entrepreneur who grew up in Nowra on the south coast of NSW. About 6years ago he founded Repower Shoalhaven. Repower Shoalhaven supports local businesses to go to solar and allows local community members to invest in these projects.

Probably the best known example of this model is Repower One – a 100kW solar farm installed on the roof of the Shoalhaven Heads Bowling Club. The Bowling Club purchases the solar electricity at a cheaper rate, the community energy group owns the solar panels and employs two young people and the community investors get a better than bank return on their investment – a win, win, win.

Of course they are not the only example, there are many more communities that have initiated their own community power projects.

Slide 30: TOTALLY RENEWABLE YACKANDANDAH

Totally Renewable Yackandandah is another great example. A few years ago Matt Charles Jones organised a forum of local people where they together set the goal of taking their town to 100% renewables by 2022. Since then they have pioneered a microgrid approach for their town, in partnership with an organisation called Mondo Power. They have supported households to install solar and batteries and a bit of kit called an Ubi. This smart kit allows different solar and battery systems to talk to each other. They are currently setting up a community-owned retailer – Indigo Power, which will then mean this Ubi can be used to allow households to share and trade electricity with one another.

Slide 31: STUCCO HOUSING COOPERATIVE

Bjorn Sturmberg and Sarah King lived in a housing cooperative in Sydney while they studied at Sydney University. They and some of their friends got excited about the idea of powering their apartment complex with solar and batteries. So they applied for a grant from the City of Sydney. With some legal and technical help and a lot of volunteer hours they created an embedded solar and battery microgrid for their unit housing cooperative. Now the tenants of Stucco get ~80% of their electricity from the microgrid and save $35/month on their electricity bills.

Slide 32: ENERGY CO-OP HEPBURN WIND

Another well-known example of community energy in Australia is the flagship project Hepburn Wind.

Hepburn Wind is Australia’s first community-owned wind farm, at Leonards Hill, about 100km north-west of Melbourne, just south of Daylesford Victoria. The 4.1 MW wind farm hosts two turbines called Gale and Gusto, so named in a competition at the local primary school. Gusto and Gale produce enough clean energy for over 2000 homes. Hepburn wind is owned by a cooperative of 2000 members, of which 51% are local.

Slide 33: COMMUNITIES DEVELOPING THEIR OWN PLANS ACROSS THE COUNTRY

These are just a few examples of the everyday Australians leading the transition to clean, renewable energy.

* We mentioned the 2 Million households but even more excitingly, people powered clean energy isn’t stopping with rooftop solar and consumer choices.
* There are now more than 105 community energy groups that have sprung up across the nation, developing innovative local clean energy projects.
* And a whopping 147 operating community energy projects up from just a handful in 2010
* Thousands of Australians are willing and able to get local renewable energy projects going in their communities, particularly in regional and rural areas.

Slide 34: LET’S GET ON WITH IT

* Clean energy is a huge opportunity for Australia and Australians. But more than that, we must do this if we want to do our fair share of tackling one of the biggest challenges we face today – climate change.
* We have the technology, skills and solutions to do this.
* So let’s get on with it.

Slide 35: HOW CAN YOU GET INVOLVED?

*We will brainstorm this together…*

Slide 36: THANK YOU